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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,561	04/07/2005	Teruo Komori	268829US0PCT	8994

22850 7590 06/30/2008

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EXAMINER	
BALDWIN, GORDON	
ART UNIT	**PAPER NUMBER**
1794	

NOTIFICATION DATE	DELIVERY MODE
06/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/530,561	KOMORI ET AL.	
	Examiner	Art Unit	
	GORDON R. BALDWIN	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20080505*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/5/2008 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoshige (Japanese Pub. No. 2001-334114) and further in view of Ichikawa (U.S. Pat. No. 7,056,568).

Consider claims 1-3, 5-6, 11 and 19-22, Motoshige teaches a ceramic honeycomb filter with a plurality of parallel passages made of silicon carbide or silicon nitride (Para. 24) that consist of large-diameter fluid passages each having a large cross-sectional area and small-diameter fluid passages having smaller cross-sectional areas than those of the large-diameter fluid passages. (Solution from the abstract) The large and small diameter passages can be arranged so that the large diameter fluid channels can act as the inlet port, while the small or narrow-diameter fluid passages

can act as the outlet. (Claim 6) Motoshige also teaches that the passages can have a sealing agent put in them so that one end face of each of the larger-diameter fluid passages and one end face of each small-diameter fluid passages are sealed, so that the sealed end face of each of the large-diameter fluid passages and the sealed end faces of each of the small-diameter fluid passages are opposite each other. (Solution from the abstract) As shown in figure 3 (a-l and 4 a-1), the large and small plugs are at opposite ends of the cylinder structure from each other in a perpendicular arrangement to the longitudinal direction of the cylinder.

Additionally, Motoshige teaches that the honeycomb shaped filter can be use in a vehicle as a diesel particle stripper. (Para. 0006)

However, Motoshige does not specifically teach that the ceramic member is made of a segmented silicon and ceramic materials in the honeycomb structure. Ichikawa discloses a honeycomb structure made of honeycomb segments bonded to each other with each segment having partition walls that are provided inside the outer wall, and a large number of through holes divided by the partition walls and extending in an axial direction of the segment. (Abstract) Motoshige also discloses, in column 7 lines 60-68 and column 8 lines 1-19, that it is known to make individual honeycomb segments (which would make up an entire honeycomb structure) with a combination of metallic silicon and a silicon carbide (which is considered to be a segregated silicon constituent and ceramic constituent) thereby giving the honeycomb segment and honeycomb structure enhanced thermal conductivity and heat resistance. Additionally, Ichikawa discloses that the through-holes of the honeycomb structure are to be plugged

and that it is known in the art to bond a plurality of individual segments using an adhesive. (Col. 1 lines 25-60)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the honeycomb structure of Motoshige with the honeycomb structure utilizing silicon-silicon carbide composite material of Ichikawa to make a honeycomb structure with enhanced heat resistance and thermal conductivity. (Ichikawa, Col. 8 lines 3-7)

Consider claim 4, Motoshige teaches, in figure 1 and 2, that the center of gravity for the large diameter holes and the center of gravity for the small diameter holes are equal. Since both diameters of the different sized holes are taught in a symmetrical arrangement with the center of gravity for the large-diameter passages and the small-diameter passages being the center of the cylinder, they are both considered to have equal distances to their centers of gravity.

Consider claim 7, Ichikawa discloses in table 1 that the porosity of the honeycomb segments can be 40 or 45%.

Consider claim 8, Motoshige discloses the claimed invention except for the surface roughness of the partition of the ceramic member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the surface roughness for the desired application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Consider claim 9, Ichikawa discloses that the thickness of the partition walls is preferably 30-2000μm (0.03mm-2.0mm), which is considered to encompass the applicant's claimed range. (Col. 8 lines 25-35)

Consider claim 10, Ichikawa teaches the use of silicon in the same capacity as the applicant, therefore the silicon carbide used in Ichikawa is considered to have the physical characteristics as those claimed by the applicant. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada,* 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily posses the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Consider claims 12-14, Motoshige teaches that the through-holes can be in a polygonal shape as well as octagonal and round. (Para. 22 and figures 1,2 and 5)

Consider claims 15 and 16, Motoshige discloses the claimed invention except for the ratio between the large volume through-hole area to the small volume through-hole area. It would have been an obvious matter of engineering choice to a person skilled in the art at the time of the invention was made to adjust the ratio of large and small volume through-holes for the desired application, since such a modification would have involved a mere change in the size of the component. A change in size is

generally recognized as being within the level or ordinary skill in the art. Gardner v. TEC systems, Inc. 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert denied, 469 U.S. 830, 225 USPQ 232 (1984).

Consider claim 17, Ichikawa discloses the use of a catalyst carrier that is to be applied to the partition and outer walls of the honeycomb segments. (Col. 8 lines 18-23 and Col. 9 lines 48-54)

Response to Arguments

Applicant's arguments filed 4/11/2008 have been fully considered but they are not persuasive. The applicant's argument is understood but it is not persuasive because Ichikawa specifically states that it is know to use a silicon-silicon carbide composite material and that the material is particularly suitable for use in a honeycomb segment. Ichikawa's specificity of materials with which a honeycomb segment can be made (silicon carbide and silicon-silicon carbide) is considered to properly narrow any laundry list that may be construed from the list given in column 7 of Ichikawa to specifically teach the applicant's claimed invention in claims 1 and 3. While it may not specifically be taught in Ichikawa to choose silicon-silicon carbide over regular silicon carbide, this comparison is not necessary to show that silicon-silicon carbide is known in the art of materials that are particularly suitable for use in honeycomb structures. This aspect is considered to be readably known, since Ichikawa specifically discloses that it is advantageous to use silicon-silicon carbide in column 8, lines 3-9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GORDON R. BALDWIN whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB

/Timothy M. Speer/
Primary Examiner
Art Unit 1794